

# **EXHIBIT A**

Advanced Cardiovascular  
Systems, Inc. v. Medtronic  
Vascular, Inc., C. A. No. 98-80  
(SLR) (Consolidated with C. A.  
No. 98-314 (SLR) and C. A. No.  
98-316 (SLR))

## EXHIBIT A TO MEDTRONIC'S NEW TRIAL MOTION

### TEXT OF ASSERTED CLAIMS

5,514,154 patent, claims 1, 4 and 12	
<p>1. A longitudinally flexible stent for implanting in a body lumen, comprising:</p> <p style="padding-left: 40px;">a plurality of cylindrical elements which are independently expandable in the radial direction and which are interconnected so as to be generally aligned on a common longitudinal axis;</p> <p style="padding-left: 40px;">a plurality of connecting elements for interconnecting said cylindrical elements, said connecting elements configured to interconnect only said cylindrical elements that are adjacent to each other; and</p> <p style="padding-left: 40px;">an outer wall surface on said cylindrical elements, said outer wall surface being smooth prior to expansion of said stent and forming a plurality of outwardly projecting edges which form as said stent is expanded radially outwardly from a first diameter to a second, enlarged diameter.</p>	
	<p>4. The stent of claim 1, wherein said plurality of cylindrical elements include a plurality of peaks and valleys having a serpentine pattern.</p>
<p>12. A longitudinally flexible stent, comprising:</p> <p style="padding-left: 40px;">a plurality of cylindrical elements which are independently expandable in the radial direction and which are</p>	

interconnected so as to be concentrically aligned on a common longitudinal axis; and

a plurality of generally parallel connecting elements for interconnecting said cylindrical elements, said connecting elements configured to interconnect only said cylindrical elements that are adjacent to each other, so that said stent, when expanded radially outwardly, retains its overall length without appreciable shortening.

6,066,167 patent, claims 5 and 8	
<p>5. A longitudinally flexible stent for implanting in a body lumen, comprising;</p> <p>a first cylindrically shaped element, a second cylindrically shaped element, a third cylindrically shaped element, up to an Nth cylindrically shaped element, the cylindrically shaped elements being generally independently expandable in the radial direction and generally aligned on a common longitudinal axis;</p> <p>each of the cylindrically shaped elements having an undulating pattern of peaks and valleys, the undulating pattern of each of the cylindrically shaped elements being out of phase with the undulating pattern of each of the adjacent cylindrically shaped elements; and</p> <p>each of the cylindrically shaped elements being interconnected to one of the adjacent cylindrically shaped elements so that the cylindrically shaped elements form a longitudinally flexible stent.</p>	
	<p>8. The stent of claim 5, wherein the peaks and valleys have a substantially U-shaped configuration.</p>

6,066,168 patent, claims 1, 3 and 11	
<p>1. A longitudinally flexible-stent for implanting in a body lumen, comprising:</p> <p>a plurality of cylindrical elements which are expandable in the radial direction and which are connected so as to be generally aligned on a common longitudinal axis; and</p> <p>at least one weld connection between each cylindrical element to attach the plurality of cylindrical elements along the common longitudinal axis thereby forming the longitudinally flexible stent.</p>	
	<p>3. The stent of claim 2, wherein the generally sinusoidal pattern of the at least some of the cylindrical elements is continuous.</p>
	<p>11. The stent of claim 1, wherein each cylindrical element has a length and a diameter, the length of each cylindrical element being less than the diameter of the cylindrical element when the stent is in an unexpanded and uncrimped configuration.</p>

6,432,133 patent, claims 1, 2, 3 and 9	
<p>1. A longitudinally flexible stent, comprising:</p> <p>a plurality of interconnected cylindrical elements aligned along a stent longitudinal axis, each cylindrical element having a shape configured to enable the cylindrical element to expand with the inflation of an expandable member disposed therein;</p> <p>wherein each of the cylindrical elements has a diameter and a length, the length of each cylindrical element being less than the diameter of the cylindrical element upon inflation of the expandable member; and</p> <p>the cylindrical elements having a length less than 2.5 mm.</p>	
	<p>2. The stent of claim 1, wherein upon expansion there is no appreciable shortening of the stent.</p>
	<p>3. The stent of claim 1, wherein the shape includes U-shaped members.</p>
	<p>9. The stent of claim 8, wherein the individual cylindrical elements are interconnected by at least one weld connection.</p>

# EXHIBIT B



"Cottrell, Frederick"  
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02/03/2005 05:55 PM

To: slr\_civil@ded.uscourts.gov  
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Subject: ACS v. Medtronic, CA NO 98-80

Dear Chief Judge Robinson,

In light of Your Honor's reconsideration ruling yesterday that "cylindrical elements" require "at least two of the three letter shaped elements," (i.e., U's, Y's, and W's), ACS respectfully asks the Court to consider two problematic aspects of that construction.

First, whereas the Court's revised construction was based on the dictionary definition of "combination," the Lau specification does not refer to a "combination" of U's, Y's, and W's. Instead, the patent discloses one embodiment that has a "plurality of U-shaped, W-shaped, and Y-shaped members." ('154 patent, col. 6:12-14.) Since "combination" does not appear anywhere in the Lau claims or the Lau specification, the definition of "combination"--a term coined for the first time by Medtronic in this litigation--cannot properly define the scope of the Lau claims.

Second, the language the Court relied upon to define "cylindrical elements" as containing U's, Y's, or W's was not even included in the original Lau application, filed in 1991. That language was instead added in the continuation-in-part application that led to the '154 patent. Yet the original Lau application (and the '955 Lau patent that issued from it) both recited and claimed "cylindrical elements," despite no mention of U's, Y's, or W's in the specification. Thus, the inventors clearly did not intend to define "cylindrical elements" as necessarily including U's, Y's, or W's. Although the original Lau application contained figures of stents with U's, Y's, and/or W's, there is no legal basis for limiting claims based solely on figures of preferred embodiments.

Finally, although the Court's original claim construction required a "combination" of U's, Y's, or W's, ACS did not move for reconsideration at that time because the issue appeared to be harmless error. Specifically, it was undisputed that all the accused stents contain U-shaped members, which is all the Court's construction required. In light of the Court's revised claim construction, however, the error is no longer harmless because the BeStent2 (one of the accused products) does not contain two different letter shapes. Thus, if the Court does not reconsider its ruling, ACS may be forced to consent to judgment of noninfringement for that product.

ACS respectfully requests an opportunity to address this important issue. ACS understands that counsel for both parties are here in Wilmington. The Court's time permitting, ACS's counsel would be prepared to appear before the Court to address this issue tomorrow, February 4, before trial starts on Monday, February 7.

Respectfully, Fred Cottrell, Counsel for Plaintiff ACS  
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# EXHIBIT C

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

ADVANCED CARDIOVASCULAR	)	
SYSTEMS, INC. and GUIDANT SALES	)	
CORPORATION,	)	
	)	C. A. No. 98-80 (SLR)
Plaintiffs,	)	(Consolidated with Civil Action
	)	No. 98-314 (SLR) and Civil Action
v.	)	No. 98-316 (SLR)
	)	
	)	
MEDTRONIC VASCULAR, INC. and	)	
MEDTRONIC USA, INC.,	)	
	)	
Defendants.	)	

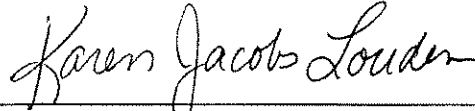
**MEDTRONIC'S REVISED PROFFER REGARDING ANTICIPATION**

Medtronic submits that it presented the issue of invalidity by anticipation for all asserted claims of the Lau '154 and '167 patents. Dr. Saigal testified that he generally understood the standard for anticipation (Tr. 1269:21-1270:14) and that he found all elements of the claims of the Lau patents in the prior art (Tr. 1276:25-1277:11; 1416:4-15). He then methodically walked through the evidence to support that each element of each asserted claim of the '154 and '167 patents was disclosed in the prior art by the Spiral Palmaz '417 patent. From this evidence, the jury can reasonably conclude that the asserted claims of the Lau '154 and '167 patents are anticipated. Accordingly, Medtronic has presented the issue of invalidity by anticipation to the jury for all asserted claims of the Lau '154 and '167 patents.

Exhibit A is a chart setting forth examples of the factual and evidentiary basis in the record to support these issues being presented to the jury. Exhibit B is excerpts of the transcript cited and relied upon in Exhibit A.

Respectfully submitted,

MORRIS, NICHOLS, ARSHT & TUNNELL



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## Exhibit A -- Detailed Proffer

No.	Claim Language	Proffer	Evidentiary Support <sup>1</sup>
	The '417 Patent Anticipates Claim 1 Of The '154 Patent		
1.	1. A longitudinally flexible stent for implanting in a body lumen, comprising:	Spiral Palmaz is a longitudinally flexible stent	1283:3-14
2.	a plurality of cylindrical elements	Spiral Palmaz has cylindrical elements	1295:23-1296:18; 1299:7-1300:4 (U's, Y's and W's present) 1374:22 - 1375:4 (combination of U's) 1339:19-1340:23 (length less than diameter) 1329:1-16 (elements not a stand-alone stent)
3.	which are independently expandable in the radial direction	The elements of Spiral Palmaz are independently expandable	1301:18-1303:16
4.	and which are interconnected so as to be generally aligned on a common longitudinal axis;	The elements of Spiral Palmaz are interconnected and generally aligned on a common longitudinal axis	1345:1-19
5.	a plurality of connecting elements for interconnecting said cylindrical elements,	Spiral Palmaz has a plurality of connecting elements for interconnecting	1303:17-1304:13

<sup>1</sup> Unless otherwise noted, all references are to Dr. Saigal's testimony as reflected in the February 15, 2005 trial transcript.

## Exhibit A -- Detailed Proffer

No.	Claim Language	Proffer	Evidentiary Support <sup>1</sup>
6.	said connecting elements configured to interconnect only said cylindrical elements that are adjacent to each other; and an outer wall surface on said cylindrical elements, said outer wall surface being smooth prior to expansion of said stent and forming a plurality of outwardly projecting edges which form as said stent is expanded radially outwardly from a first diameter to a second, enlarged diameter.	Spiral Palmaz expands to form outwardly projecting edges	1309:5-23 (four prior art stents with outwardly projecting edges) 1310:19-1320:6 (Palmaz elements inherently have outwardly projecting edges) DTX 0104 (coronary handbook) at Appendix B page 310 (picture of Palmaz element showing outwardly projecting edges)
	The '417 Patent Anticipates Claim 4 Of The '154 Patent		
7.	The stent of claim 1,	Spiral Palmaz satisfies claim 1.	See above
8.	wherein said plurality of cylindrical elements include a plurality of peaks and valleys having a serpentine pattern.	Spiral Palmaz has the necessary peaks and valleys with a serpentine pattern.	1336:21-1338:21
	The '417 Patent Anticipates Claim 12 Of The '154 Patent		
9.	A longitudinally flexible stent, comprising:	Spiral Palmaz is a longitudinally flexible stent	Same as 1, above
10.	a plurality of cylindrical elements	Spiral Palmaz has cylindrical elements	Same as 2, above
11.	which are independently expandable in the radial direction	The elements of Spiral Palmaz are independently expandable	Same as 3, above

## Exhibit A -- Detailed Proffer

No.	Claim Language	Proffer	Evidentiary Support <sup>1</sup>
12.	and which are interconnected so as to be concentrically aligned on a common longitudinal axis; and a plurality of generally parallel connecting elements for interconnecting said cylindrical elements, said connecting elements configured to interconnect only said cylindrical elements that are adjacent to each other,	Spiral Palmaz has parallel connecting elements for interconnecting	Same as 5, above
13.	so that said stent, when expanded radially outwardly, retains its overall length without appreciable shortening.	Spiral Palmaz expands without appreciable shortening	1324:21-1325:23 DTX 0103 (coronary handbook for Spiral Palmaz)
	The '417 Patent Anticipates Claim 5 Of The '167 Patent		
14.	A longitudinally flexible stent for implanting in a body lumen, comprising:	A longitudinally flexible stent	Same as 1, above
15.	a first cylindrically shaped element, a second cylindrically shaped element, a third cylindrically shaped element, up to an Nth cylindrically shaped element, the cylindrically shaped elements	Spiral Palmaz has N Cylindrically shaped elements	Cylindrical elements - same as 2, above 1327:20-1329:19 (N portion)
16.	being generally independently expandable in the radial direction	The elements of Spiral Palmaz are independently expandable	Same as 3, above
17.	and generally aligned on a common longitudinal axis;	The elements of Spiral Palmaz are generally aligned on a common longitudinal axis	Same as 4, above

## Exhibit A -- Detailed Proffer

No.	Claim Language	Proffer	Evidentiary Support <sup>1</sup>
18.	of peaks and valleys,	The elements of Spiral Palmaz have peaks and valleys	Same as 8, above
19.	the undulating pattern of each of the cylindrically shaped elements being out of phase with the undulating pattern of each of the adjacent cylindrically shaped elements;	The undulating pattern of the Spiral Palmaz is out of phase	Undulating pattern incorporated from cylindrical element 2, above 1336:25-1337:4
20.	and each of the cylindrically shaped elements being interconnected to one of the adjacent cylindrically shaped elements so that the cylindrically shaped elements form a longitudinally flexible stent.	The elements of Spiral Palmaz are interconnected	1304:14-1305:11
The '417 Patent Anticipates Claim 8 Of The '167 Patent			
21.	The stent of claim 5,	Spiral Palmaz satisfies claim 5.	See above
22.	wherein the peaks and valleys have a substantially U-shaped configuration.	The peaks and valleys of Spiral Palmaz have a U-shaped configuration	Same as 19, above (peaks and valleys and out of phase terms)

**Exhibit B -- Cited Excerpts**

1283:3-14	<p>3 Q. Okay. Let's go to Slide 14. What is that?</p> <p>4 A. This is a passage from Palmaz '417 patent regarding</p> <p>5 the spiral Palmaz.</p> <p>6 Q. And how does this passage relate to opinion you</p> <p>7 have regarding whether the spiral Palmaz is longitudinally</p> <p>8 flexible or not?</p> <p>9 A. This passage clearly states that the spiral Palmaz</p> <p>10 is able to flexibly bend and to negotiate the curves or</p> <p>11 bends found in body passageways.</p> <p>12 Q. And did you conclude that the spiral Palmaz is</p> <p>13 longitudinally flexible?</p> <p>14 A. Yes, I did.</p>
1295:23- 1296:18	<p>23 Q. All right, sir. If we could put Slide 23 up there.</p> <p>24 Now, sir, we have this one blown up a little</p> <p>25 bit. And with the Court's permission, can we step down</p> <p style="text-align: center;">1296</p> <p>1 to a blowup of Slide 23, your Honor?</p> <p>2 THE COURT: Yes.</p> <p>3 MR. MORISSEAU: Okay. All right.</p> <p>4 And I'm going to remove this for a second.</p> <p>5 And if you can step down, sir...</p> <p>6 (At this point the witness stepped down from</p> <p>7 the witness stand and approached the easel.)</p> <p>8 BY MR. MORISSEAU:</p> <p>9 Q. All right. What do we have here?</p> <p>10 A. We have here some four stents from the prior art,</p> <p>11 description of them. The spiral Palmaz, the Schatz,</p> <p>12 the Wolff and the Furui and we've seen all of them</p> <p>13 earlier today.</p> <p>14 Q. All right.</p> <p>15 Q. Now, do any of them have U's or Y or W-shaped</p> <p>16 members?</p> <p>17 A. Each one has a combination of U's and Y's, U's and</p> <p>18 W's, any of them.</p>
1299:7- 1300:4	<p>7 Q. All right, sir. And the last one, the spiral</p> <p>8 Palmaz, do you show any U-shaped, Y-shaped or W-shaped</p> <p>9 members there?</p> <p>10 A. U first, and Y is in red.</p> <p>11 Q. Red is right behind you, sir.</p> <p>12 A. And Y.</p> <p>13 Q. All right, sir. Now, having looked at that, let's</p> <p>14 see if we can tie them to -- into the definition.</p> <p>15 MR. MORISSEAU: If we could go back to Slide</p> <p>16 22 or 21...</p> <p>17 Let me see. Actually, go back to Slide 20.</p> <p>18 THE WITNESS: Should I go back on the stand?</p> <p>19 MR. MORISSEAU: If you can stand here one</p> <p>20 second, I just want to put this in context.</p> <p>21 Go back to Slide 20, please.</p> <p>22 How about 19?</p> <p>23 BY MR. MORISSEAU:</p> <p>24 Q. All right. Medtronic's proposal: Any combination</p> <p>25 of U-shaped, W-shaped or Y-shaped members.</p> <p style="text-align: center;">1300</p> <p>1 Do you see a combination of U, W or Y-shaped</p> <p>2 members in the Palmaz?</p>



**Exhibit B -- Cited Excerpts**

	<p>3 A. In the spiral Palmaz, I see a combination of U 4 and Y-shaped members.</p>
<p>1374:22 - 1375:4</p>	<p>22 Q. Okay. And can you elaborate on that, sir? 23 A. Claim 8 asked for where in the peaks and valleys 24 have a substantially U-shaped configuration, and it also 25 calls the Claim 5. Claim 5 is already discussed and both</p> <p style="text-align: center;">1375</p> <p>1 spiral Palmaz and Schatz had the substantial U-shaped 2 configuration. 3 So that was -- you know, these combinations 4 made the Claim 8 of '167 patent obvious.</p>
<p>1339:19- 1340:23</p>	<p>19 Q. Okay, sir. And if you turn to Slide No. 59, what 20 does that show? 21 A. It shows that spiral Palmaz and Bonneau are the 22 ones that both had their lengths less than their diameter 23 in the expanded state. 24 Q. Okay, sir. And how did you go about determining 25 spiral Palmaz had a length less than diameter?</p> <p style="text-align: center;">1340</p> <p>1 A. I looked in the patent, the '417 patent, and there 2 was a picture there, figure that shows the expanded stent. 3 Q. All right. Can you go to Slide No. 60, sir? All 4 right. 5 First of all, spiral Palmaz, this looks like 6 the picture that you just drew on a second ago. 7 A. That's right. 8 Q. Okay. Is this Figure 10 in that patent, sir? 9 A. This is Figure 10 in the '417 patent. 10 Q. And you got a red -- the red lines and the blue 11 lines and it looks like some sort of measuring stick. 12 Why don't you explain what's shown to us in 13 that picture, sir. 14 A. Okay. First on the picture, what is shown with the 15 arrows in red is the length of the individual element in 16 the expanded state. What is shown in blue with the arrows 17 over there is the diameter in the expanded state. Then 18 I've taken those exact two arrows and put them along a 19 scale and you can see from that scale the length is less 20 than the diameter. 21 Q. All right. 22 A. Again, to emphasize, this is all in the expanded 23 state for this particular stent.</p>
<p>1329:1-16</p>	<p>1 Okay. This is a picture on the first page of 2 the '417 patent. 3 A. Right. 4 MR. MORISSEAU: For the record, this is 5 AX-160. 6 BY MR. MORISSEAU: 7 Q. Okay. How many elements do you see there? 8 A. The first one, the second one and the third one. 9 Three elements. 10 Q. Three of them. 11 Now, it slid down. It shouldn't have done 12 that. Let me see if I can put it right here.</p>

**Exhibit B -- Cited Excerpts**

	<p>13 Now, in looking, in all the study and all the</p> <p>14 research that you did, sir, did you ever see anyone use</p> <p>15 one of those elements as a stand-alone stent?</p> <p>16 A. No, I did not.</p>
1301:18- 1303:16	<p>18 Q. Let's go to the next term, independently expandable</p> <p>19 in the -- it should be radial. It says radial</p> <p>20 direction, but I think we made a mistake last night</p> <p>21 putting it together.</p> <p>22 That should read independently expandable in</p> <p>23 the radial direction?</p> <p>24 A. Right.</p> <p>25 Q. And the Court has defined that?</p> <p style="text-align: center;">1302</p> <p>1 A. Yes, the Court has defined that as each cylindrical</p> <p>2 element is relatively independently expandable with</p> <p>3 respect to each adjacent cylindrical element.</p> <p>4 Q. Did you look in the prior art to see if there were</p> <p>5 prior-art stents that were independently expandable?</p> <p>6 A. Yes, I did.</p> <p>7 Q. And what did you find?</p> <p>8 A. I found, again, five different stents in the prior</p> <p>9 art that were all -- that had elements that were</p> <p>10 independently expandable.</p> <p>11 Q. All right, sir. If you could turn to Slide 27...</p> <p>12 What is that?</p> <p>13 A. It shows these five stents that I just talked</p> <p>14 about.</p> <p>15 Q. Let's start with the top one, modified Palmaz,</p> <p>16 sir.</p> <p>17 How does that expand independently?</p> <p>18 A. Modified Palmaz had two separate pieces. They were</p> <p>19 not connected to each other. It's obvious you could</p> <p>20 expand one without affecting the one next to it. So</p> <p>21 that's why that was independently expandable.</p> <p>22 Q. The bottom four, sir, they all have connectors of</p> <p>23 some sort?</p> <p>24 A. They do.</p> <p>25 Q. And for the record, that's the Schatz, the spiral</p> <p style="text-align: center;">1303</p> <p>1 Palmaz, the Wolff and the Furui?</p> <p>2 A. Correct.</p> <p>3 Q. Were those independently expandable?</p> <p>4 A. Yes, they were.</p> <p>5 Q. And can you explain the basis for your opinion that</p> <p>6 they were independently expandable?</p> <p>7 A. Each one of them has a connector connecting the</p> <p>8 two separate elements, which allows, so if there's any</p> <p>9 distortion that's going to occur between the one and</p> <p>10 the next, that's taken up by the connecting element.</p> <p>11 So that connecting element allows you to</p> <p>12 expand the separate pieces totally independently,</p> <p>13 relatively independently of each other.</p> <p>14 Q. So it's okay for us to check off No. 4 on this</p> <p>15 list?</p> <p>16 A. I would think so.</p>
1345:1-19	<p>1 Q. Got two left. Generally aligned on a common</p>

**Exhibit B -- Cited Excerpts**

	<p>2 longitudinal axis, sir.  3 Has the Court defined that term?  4 A. No.  5 Q. And that's shown on Slide 67.  6 Did you find any stent that was on a common  7 longitudinal axis?  8 A. Yes. Several.  9 Q. Okay. Slide 68 is what, sir?  10 A. Slide 68?  11 Q. Slide 68.  12 A. Slide 68 shows several stents in the prior art  13 that were all aligned on a common longitudinal axis.  14 Q. And for the record, sir, what are those stents?  15 A. Those are modified Palmaz, Schatz, spiral Palmaz,  16 Boneau, many put on the same balloon and delivered,  17 Wolff and Furui.  18 Q. No. 17, sir, is it fair to check it off our list?  19 A. I would say so.</p>
1336:25- 1337:4	<p>25 A. This is the expanded view of the spiral Palmaz, the</p> <p style="text-align: center;">1337</p> <p>1 Palmaz '417 stent.  2 ---  3 Q. All right. Is that in phase or out of phase?  4 A. This is also out of phase.</p>
1303:17- 1304:13	<p>17 How does that expand independently?  18 A. Modified Palmaz had two separate pieces. They were  19 not connected to each other. It's obvious you could  20 expand one without affecting the one next to it. So  21 that's why that was independently expandable.  22 Q. The bottom four, sir, they all have connectors of  23 some sort?  24 A. They do.  25 Q. And for the record, that's the Schatz, the spiral</p> <p style="text-align: center;">1303</p> <p>1 Palmaz, the Wolff and the Furui?  2 A. Correct.  3 Q. Were those independently expandable?  4 A. Yes, they were.  5 Q. And can you explain the basis for your opinion that  6 they were independently expandable?  7 A. Each one of them has a connector connecting the  8 two separate elements, which allows, so if there's any  9 distortion that's going to occur between the one and  10 the next, that's taken up by the connecting element.  11 So that connecting element allows you to  12 expand the separate pieces totally independently,  13 relatively independently of each other.</p>
1309:5-23	<p>5 Q. Okay. We can mark that off with a check mark.  6 And that brings us out to No. 9, outwardly projecting  7 edges.  8 First of all, Slide No. 40 is what?  9 A. The definition provided by the Court for outwardly  10 projecting edges.  11 Q. And what is that definition, sir?  12 A. It says, portions of the U-shaped, Y-shaped or  13 W-shaped members that tip outwardly during expansion,</p>

**Exhibit B -- Cited Excerpts**

	<p>14 resulting in projections on the outer surface of the</p> <p>15 expanded stent.</p> <p>16 Q. All right. Did you look at the prior art to see</p> <p>17 if there were any outwardly projecting edges of U-shaped,</p> <p>18 Y-shaped or W-shaped members?</p> <p>19 A. Yes, I did.</p> <p>20 Q. And what did you find?</p> <p>21 A. I found four different stents that had.</p> <p>22 Q. Okay. And is that what's listed on Slide No. 41?</p> <p>23 A. Yes, it is.</p>
1310:19- 1320:6	<p>19 Q. Okay. Now, sir, I want you to turn to Slide 42 and</p> <p>20 identify that, sir. Slide 43. Excuse me.</p> <p>21 A. 43 is the picture -- there's a typographical</p> <p>22 error again. It should say prior-art stents that had</p> <p>23 outwardly projecting edges.</p> <p>24 Q. Instead of stents?</p> <p>25 A. Instead of stents.</p> <p style="text-align: center;">1311</p> <p>1 Q. That's two I missed last night.</p> <p>2 A. And that shows the modified Palmaz stent, which was</p> <p>3 composed of several 7-millimeter-long slotted tube stents</p> <p>4 all mounted on the same balloon.</p> <p>5 Q. Okay. I want to spend a few minutes on outwardly</p> <p>6 projecting edges, your understanding of that, sir.</p> <p>7 First of all, are outwardly projecting edges,</p> <p>8 do they exist in all states of the stent? For example,</p> <p>9 this one is a state that we call, I believe we've been</p> <p>10 referring to as unexpanded and uncrimped?</p> <p>11 A. That's right.</p> <p>12 Q. Are there outwardly projecting edges on the Palmaz</p> <p>13 stent there?</p> <p>14 A. No, not in this state.</p> <p>15 Q. Okay.</p> <p>16 A. Not in the uncrimped, unexpanded state, no.</p> <p>17 Q. When it's expanded, the modified Palmaz, does it</p> <p>18 have outwardly projecting edges?</p> <p>19 A. Yes.</p> <p>20 Q. So even though this drawing here is of the</p> <p>21 unexpanded, unmodified, and does not show outwardly</p> <p>22 projecting edges, you have the opinion that there are</p> <p>23 outwardly projecting edges when this type of stent is</p> <p>24 expanded?</p> <p>25 A. Correct.</p> <p style="text-align: center;">1312</p> <p>1 Q. Okay. And let me turn to Page 44. Slide 44.</p> <p>2 Excuse me.</p> <p>3 And if you can identify what those two</p> <p>4 pictures are, sir...</p> <p>5 A. Okay. The light picture on the left is actually a</p> <p>6 picture from one of these handbooks. It's Appendix B and</p> <p>7 it's the picture of an expanded Palmaz/Schatz stent, one</p> <p>8 of the elements of that stent.</p> <p>9 And if you look closely, you can see the two</p> <p>10 slots have now become two diamonds and so on.</p> <p>11 That's the picture on the left.</p> <p>12 The one on the right is the one that Dr.</p>

**Exhibit B -- Cited Excerpts**

13 Kahn showed you here, and that is also the picture of  
14 an expanded Palmaz/Schatz stent inside -- inside a tube.  
15 MR. MORISSEAU: Your Honor, may I approach  
16 the witness?  
17 THE COURT: Yes, you may.  
18 BY MR. MORISSEAU:  
19 Q. You talked about the handbook and I put them in back  
20 of you. Now I'm pulling them out.  
21 And 103.  
22 Could you find in the handbook the picture  
23 which is on the left-hand side of Slide No. 44?  
24 A. Appendix B.  
25 Q. Appendix B? Is it in this one? Here. I will let

1313

1 you find it.  
2 (Pause.)  
3 THE WITNESS: Right here.  
4 BY MR. MORISSEAU:  
5 Q. Okay. And we will show it to the jury in a second.  
6 A. Okay.  
7 Q. What I want you to do is identify the exhibit number.  
8 A. Okay.  
9 Q. Which is?  
10 A. DTX-0104.  
11 Q. And what page are you referring to?  
12 A. Appendix B, Page 310. It's Figure B. B as in boy.  
13 Q. All right, sir. And what is shown on that page as  
14 it relates to Slide 44?  
15 A. What is shown is -- what is shown on this slide is  
16 a blown up view of the picture that is shown here as  
17 Figure B, and that's the expanded view of the Palmaz/Schatz  
18 element.  
19 Q. Okay. Did you look at this picture on Page 310 of  
20 Exhibit -- in coming up with your opinion whether the  
21 Palmaz stent had outwardly projecting edges?  
22 A. Yes.  
23 Q. What did you conclude?  
24 A. The arrows are pointed to where I looked and you  
25 can see the edges are kind of curved out, projected

1314

1 outside, similar to what you saw in the Lau patent,  
2 things are coming out in a potato chip fashion.  
3 Q. You read the Lau patent; is that right, sir?  
4 A. Yes, I did.  
5 Q. In fact, you read all four of the patents in suit?  
6 A. Yes, I did.  
7 Q. Anywhere in the Lau patents, does it say why  
8 outwardly projecting edges are significant?  
9 A. I -- it said that they are significant so they imbed  
10 in the vascular wall, the wall of the vessel.  
11 Q. Okay. I want to show you Slide No. 45, sir. What  
12 is that?  
13 A. This is a slide that I put together to show the  
14 comparisons. I put the Figure 13 from Lau '154 patent and  
15 the figure that we just got from the handbook, put them  
16 right next to each other to see how they compare in terms

**Exhibit B -- Cited Excerpts**

17 of outwardly projecting edges.  
 18 Q. And how do they compare?  
 19 A. I found them to be awfully similar in terms of  
 20 depicting outwardly projecting edges.  
 21 Q. Do you have your laser pointer handy, sir?  
 22 A. Yes, I do.  
 23 Q. Okay. What I'd like for you to do is, looking at  
 24 the Palmaz element on the left side of Slide 45, identify  
 25 where the outwardly projecting edge is there or edges.

1315

1 A. Try again.  
 2 Q. Are you having some trouble?  
 3 A. I don't know where the dot is.  
 4 Q. I think it's --  
 5 A. There it is.  
 6 Q. Okay.  
 7 A. There it is.  
 8 Q. All right.  
 9 A. On the Lau, there is an outwardly projecting edge.  
 10 Q. All right.  
 11 A. You come to the Palmaz element right there, similar  
 12 outwardly projecting edge. Look at this one down here,  
 13 outwardly projecting, outwardly projecting. This is also  
 14 outwardly.  
 15 So these pictures, because of the angle at  
 16 which the picture has been taken, you can't really see,  
 17 but you can see really this also is potato chipping a  
 18 little bit outside, same as, for example, this element  
 19 right there (indicating).  
 20 So there are similarities. A lot of  
 21 projecting edges in both Figure 13 and the photograph  
 22 shown on the left.  
 23 Q. Is there any question in your mind, based upon the  
 24 work that you've done here, sir, that when the Palmaz  
 25 element is expanded, it will have outwardly projecting

1316

1 edges?  
 2 A. No. No question in my mind.  
 3 Q. And why do you say that, sir?  
 4 A. Well, in relation to this evidence that you see, the  
 5 similarity of the edges coming out, there is, like I said,  
 6 my expertise is in the area of mechanics.  
 7 It is from -- it is from the mechanics, the  
 8 way things deform. I know that as this particular  
 9 configuration expands, and these diamonds form, that  
 10 these -- these connecting edges in the diamond, they are  
 11 going to have to sort of twist outside. They're going  
 12 to have to twist out of plane. And as soon as they do  
 13 that twisting out of plane, that's going to cause the  
 14 outwardly projecting edge.  
 15 Q. All right. I want to put that testimony in a  
 16 little bit of context.  
 17 If we can go back to Slide 43...  
 18 That's what the Palmaz element looks like  
 19 unexpanded, uncrimped?  
 20 A. Correct.



**Exhibit B -- Cited Excerpts**

21 Q. It's got an U shape in there, the U shape in there,  
22 and it's at right angles; right, sir?  
23 A. Yes.  
24 Q. Now, if we could go to Slide 45, when it's expanded,  
25 those little slots, they get very big?

1317

1 A. That's right.  
2 Q. Relatively speaking? Relatively speaking?  
3 A. That's right.  
4 Q. Okay. And as they get big, sir, what happens to  
5 the structure based upon your experience in structural  
6 engineering?  
7 A. Well, like I said, as they get big, the structure  
8 has to twist out of plane to accommodate that expansion  
9 that it is experiencing. Okay? And that twisting out  
10 of plane causes the outwardly projecting edges.  
11 Q. Is there a simple experiment that you can show to  
12 do that?  
13 A. I didn't bring it with me, though.  
14 Q. All right. I brought it with you.  
15 A. Yes.  
16 MR. MORISSEAU: Your Honor, can he step down  
17 from the --  
18 THE COURT: Yes.  
19 MR. MORISSEAU: -- from the chair?  
20 (At this point the witness stepped down from  
21 the witness stand and approached the chart.)  
22 BY MR. MORISSEAU:  
23 Q. Maybe what we can do, we can do it over here.  
24 This is something we worked with over the weekend?  
25 A. That's right.

1318

1 Q. And it's very, very crude. I just folded a piece  
2 of paper and I tore a section out of it?  
3 A. That's right.  
4 Q. Okay.  
5 MR. MORISSEAU: If we could go back to Slide  
6 43 for a second...  
7 BY MR. MORISSEAU:  
8 Q. Now, what we were trying to do, sir, in tearing this  
9 piece of paper, was to replicate what portion of the  
10 modified Palmaz?  
11 A. We were modifying the U that you had pointed the  
12 laser at.  
13 Q. Okay. And if you can just hold that for a second  
14 for me, we'll point the laser at it again, just to be  
15 clear.  
16 We're talking about this U section; right?  
17 A. That's right.  
18 Q. And this is basically a U section. It's just a  
19 piece of paper, but it's an U section?  
20 A. That's right.  
21 Q. Now, sir, if we could go to Slide 45, please...  
22 Now, this shows the expanded one, where those  
23 little slots have gotten bigger. And I believe you  
24 testified it formed outwardly projecting edges?

**Exhibit B -- Cited Excerpts**

	<p>25 A. That's right.</p> <p style="text-align: center;">1319</p> <p>1 Q. The slots as they expand creates the large kind  2 of almost diamond-shaped holes in this?  3 A. That's right.  4 Q. Okay. Now, sir, just using this very, very crude  5 piece of paper that you and I worked on this past  6 weekend, can you show us, sir, how an expansion of that  7 U-shaped member will result in outwardly projecting  8 edges?  9 A. Yes. Let me first explain that when things expand,  10 they are experiencing a pull and that pull in mechanics  11 is called tension. Okay?  12 So what I'm going to do is, I'm going to try  13 to pull these two members so as to create the tension  14 and, as I do that, you can see that this member is kind  15 of -- is twisting out.  16 Q. It depends where you pull it?  17 A. That's right.  18 See that member coming out like a potato chip  19 right here? And that's done -- caused by the pull  20 created over here.  21 Q. All right, sir.  22 A. That -- that is the outwardly projecting edge.  23 Q. Okay. All right. And from your structural  24 engineering viewpoint, what we've just seen here, does  25 it make sense?</p> <p style="text-align: center;">1320</p> <p>1 A. It absolutely makes sense.  2 As you are creating this tension, this is a  3 thicker piece. It doesn't have a place to bend the same  4 way this is bending. But it has to accommodate the  5 deformation and to accommodate it, it sort of twists out  6 of plane, to give you the outwardly projecting edge.</p>
<p>1336:21- 1338:21</p>	<p>21 Q. All right, sir.  22 Now, I'm going to show you another blowup  23 that we have, which corresponds with our Slide No. 56.  24 And I will ask you what this is, sir.  25 A. This is the expanded view of the spiral Palmaz, the</p> <p style="text-align: center;">1337</p> <p>1 Palmaz '417 stent.  2 ---  3 Q. All right. Is that in phase or out of phase?  4 A. This is also out of phase.  5 Q. If you need to use some of the markers, feel free.  6 If you could identify or explain that  7 testimony you gave about this being out of phase...  8 A. Okay. What I'm going to do is I'm going to  9 identify the peaks with a red color.  10 ---  11 A. (Continuing) Followed by a valley in blue, followed  12 by let's say another peak in red.  13 I'm now going to do the same thing. Peaks  14 in red, valleys in blue there, and so here is a peak.  15 Q. Okay. Do you need to use red again, sir? All</p>



**Exhibit B -- Cited Excerpts**

	<p>16 right.  17 A. This was supposed to be red.  18 Q. Now it's purple.  19 A. Followed by a red. So then -- let me actually  20 correct my mistake. Peak is red, peak is red. This is  21 a peak, this is a valley and this is a valley.  22 To see a -- right here (indicating). In an  23 in-phase arrangement, you see that the peak and the peak  24 are both aligned. When they are not aligned --  25 Q. Let me hold this up. Why don't you just restate</p> <p style="text-align: center;">1338</p> <p>1 what you just said, sir?  2 A. I actually want both of them.  3 Q. Okay. I will hold it up like this. How's that?  4 A. So for an in-phase arrangement, you will see a peak  5 and a peak of two adjacent elements aligned.  6 You come here -- and also a valley and a  7 valley aligned. A valley is aligned with a valley.  8 Here's a valley and the valley is over there.  9 It's not aligned.  10 What I did is actually, if I were to show you  11 a valley here also.  12 Now, these two valleys are aligned and from  13 there you can see that the valley in the middle is not  14 aligned. It's out of phase. Okay? And that's why this  15 is an out-of-phase arrangement.  16 You can see this one more second. A peak,  17 and here's a peak. Peaks are aligned, but not of the  18 adjacent elements. And when you look at that and you  19 look at this peak, the third peak there, it's displaced.  20 That's what makes it out of phase.  21 Q. All right, sir. Thank you.</p>
1321:1- 1323:10	<p style="text-align: center;">1321</p> <p>1 If we can go to Slide 46...  2 (At this point the witness then resumed the  3 witness stand.)  4 BY MR. MORISSEAU:  5 Q. Has the Court defined this, sir?  6 A. Yes.  7 Q. And how has it defined it?  8 A. As a stent does not substantially shorten upon  9 expansion.  10 Q. All right. Now, you were here when Dr. Segal  11 testified?  12 A. Yes, I was.  13 Q. And he testified about what he believed significant  14 shortening was and wasn't?  15 A. That's right.  16 Q. Let's go to Slide No. 47, please.  17 All right. Now, this is another question  18 that Mr. Morin asked of Dr. Segal. Why don't you read  19 the question and read the answer to us, sir?  20 A. Mr. Morin said, What do you consider to be  21 significant shortening?  22 And the answer Dr. Segal gave was, I'd say  23 more than 10 percent would be significant.  24 Q. All right.</p>

**Exhibit B -- Cited Excerpts**

	<p>25 A. Thereby implying that less than 10 percent would</p> <p style="text-align: center;">1322</p> <p>1 be without appreciable shortening.</p> <p>2 Q. All right, sir. Now, did you look at the prior art</p> <p>3 to see how these stents that we've been talking about,</p> <p>4 whether they shorten or not?</p> <p>5 A. Yes, I did.</p> <p>6 Q. And let's put it in a little bit of context.</p> <p>7 Shortening. Shortening means what, sir, with respect to</p> <p>8 a stent as it operates?</p> <p>9 A. Anything when it expands gets into a bigger diameter,</p> <p>10 then also shortens. In mechanics, that's called the</p> <p>11 Poisson effect. Expansion causes shortening.</p> <p>12 So the stent, when you expand the stent, will</p> <p>13 also lose some length and that's referred to as</p> <p>14 shortening. And if you compare it with the total length</p> <p>15 before, then that's -- that ratio is the -- is the</p> <p>16 percent of shortening that they talk about in the stent</p> <p>17 literature.</p> <p>18 Q. Okay. Is shortening a good thing or a bad thing in</p> <p>19 this case?</p> <p>20 A. Shortening is a bad thing.</p> <p>21 Q. Okay. And why is that?</p> <p>22 A. Because the surgeon may go in thinking they're going</p> <p>23 to cover a certain part of the lesion by looking at the</p> <p>24 original length, but then when they really go and blow it</p> <p>25 up inside, the vessel, it may not cover that lesion, and</p> <p style="text-align: center;">1323</p> <p>1 so that can lead to further problems. So it's not a good</p> <p>2 thing because of that.</p> <p>3 ---</p> <p>4 Q. So is it fair to say that, based upon your study</p> <p>5 over the past designers, stent designers don't want</p> <p>6 their stent to shorten that much when they expand?</p> <p>7 A. That's correct.</p> <p>8 Q. Did you look at the prior art to see how much they</p> <p>9 shortened?</p> <p>10 A. Yes, I did.</p>
<p>1324:21- 1325:23</p>	<p>21 Q. Did you look at the stent handbook for spiral</p> <p>22 Palmaz?</p> <p>23 A. Yes, I did.</p> <p>24 Q. And is that what's shown on Slide No. 49?</p> <p>25 A. Right.</p> <p style="text-align: center;">1325</p> <p>1 Q. Okay. And share with us the information you saw</p> <p>2 or you found when you went through the coronary handbook.</p> <p>3 By the way, this is the same Exhibit 103?</p> <p>4 A. That's right. Two pages later or three pages later</p> <p>5 on the same handbook.</p> <p>6 Q. All right. And what does this show, sir?</p> <p>7 A. This is a table on the left here, right here, this</p> <p>8 table. And this refers to a whole bunch of spiral</p> <p>9 Palmazes shown right above that.</p> <p>10 And what this passage says here is that the</p> <p>11 shortening for all of these varies between 2.5 to 13.2</p>

**Exhibit B -- Cited Excerpts**

	<p>12 percent.</p> <p>13 Q. All right. And how does that relate to this 10-</p> <p>14 percent figure that Dr. Segal testified to?</p> <p>15 A. A majority of that percentage, a large majority of</p> <p>16 that percentage, is below the 10 percent that Dr. Segal</p> <p>17 said would constitute appreciable shortening.</p> <p>18 Q. Sir, now, do you think that the modified Palmaz and</p> <p>19 the Schatz, do you believe those appreciably shorten?</p> <p>20 A. No, they do not.</p> <p>21 Q. Do you believe that at least a good portion of the</p> <p>22 spiral Palmaz stents don't appreciably shorten?</p> <p>23 A. That's right.</p>
<p>1327:20- 1329:19</p>	<p>20 Q. All right. 12th term on our list, we're two-thirds</p> <p>21 of the way through almost, N cylindrically-shaped elements.</p> <p>22 MR. MORISSEAU: If you could turn to our Slide</p> <p>23 52...</p> <p>24 BY MR. MORISSEAU:</p> <p>25 Q. Has the Court construed that term?</p> <p style="text-align: center;">1328</p> <p>1 A. Yes. No, it has not. I'm sorry.</p> <p>2 Q. Okay. And did you hear Dr. Segal testify to what</p> <p>3 he considered N to be?</p> <p>4 A. Yes.</p> <p>5 Q. What was that?</p> <p>6 A. He said three or more.</p> <p>7 Q. With that definition, did you find any prior-art</p> <p>8 stents with three or more elements?</p> <p>9 A. Yes, I did.</p> <p>10 Q. Okay, sir. And which ones are those?</p> <p>11 A. That would be the spiral Palmaz in the '417 patent.</p> <p>12 Q. Okay. And is that shown on Slide 53?</p> <p>13 MR. MORISSEAU: If we could have Slide 53,</p> <p>14 please...</p> <p>15 BY MR. MORISSEAU:</p> <p>16 Q. Is that shown there, sir?</p> <p>17 A. It is.</p> <p>18 Q. Well, it's shown in the language, actually?</p> <p>19 A. And it's shown in the picture.</p> <p>20 Q. The picture shows what?</p> <p>21 A. The picture shows three segments forming the stent</p> <p>22 and that would fall under three or more.</p> <p>23 Q. All right. Since we're here, sir, what I may want</p> <p>24 to do is put that one on the Elmo, if we could change to</p> <p>25 that very briefly and blow it up just a little bit.</p> <p style="text-align: center;">1329</p> <p>1 Okay. This is a picture on the first page of</p> <p>2 the '417 patent.</p> <p>3 A. Right.</p> <p>4 MR. MORISSEAU: For the record, this is</p> <p>5 AX-160.</p> <p>6 BY MR. MORISSEAU:</p> <p>7 Q. Okay. How many elements do you see there?</p> <p>8 A. The first one, the second one and the third one.</p> <p>9 Three elements.</p> <p>10 Q. Three of them.</p>

**Exhibit B -- Cited Excerpts**

	<p>11 Now, it slid down. It shouldn't have done  12 that. Let me see if I can put it right here.  13 Now, in looking, in all the study and all the  14 research that you did, sir, did you ever see anyone use  15 one of those elements as a stand-alone stent?  16 A. No, I did not.  17 Q. All right. Let's check off No. 12, because you found  18 N cylindrically shaped elements?  19 A. Yes, I did.</p>
<p>304:14-  305:11</p>	<p>14 Q. All right, sir. The sixth element on our list is  15 what?  16 A. Interconnected.  17 Q. Okay.  18 A. And --  19 Q. We have a slide for that. Turning to Slide No. 30.  20 What is the Court's definition of  21 interconnected and connected?  22 A. Simply connected.  23 Q. Okay. Did you look at the prior art to see if any  24 stents were connected?  25 A. Yes, I did.</p> <p style="text-align: center;">1305</p> <p>1 Q. And what did you find?  2 A. I found, again, that there were four stents in the  3 prior art that were all interconnected.  4 Q. All right. And what is Slide No. 31?  5 A. 31 shows Schatz, spiral Palmaz, Wolff and Furui and  6 the fact that they were all interconnected.  7 Q. And you've indicated the connections or the  8 interconnections with the circles; right, sir?  9 A. Right.  10 Q. Is it okay to check off No. 6 from this list?  11 A. Yes.</p>

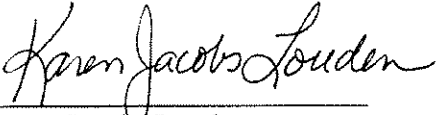
CERTIFICATE OF SERVICE

I, the undersigned, hereby certify that on February 16, 2005, I caused true and correct copies of the foregoing to be served on the following counsel in the manner indicated:

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